ZX-Appeal

vancouver sinclair users group

next meeting:

KILLARNY COMMUNITY CENTRE
6260 KILLARNY STREET
VANCOUVER

FRIDAY; 7:00PM
SEPT 14

ZXAppeal is a monthly
newsletter put out by the
Vancouver Sinclair Users Group.
For more information on the
group and ZXAppeal see the backcover.

inside:

...gone fishin'

THIS ISSUE...........................

The last time we spoke I was asking how you'd enjoyed the winter. Now I'm asking how'd your summer go? Well time does fly by. As most of you know, I'm passing on the Editor's Baton after this issue. Not because I no longer enjoy putting the n/l together but because of the frustration that comes from not being able to produce a n/l of the standard I try to keep to. This is mainly due to a lack of new material. Because I enjoy the n/l I'm more than willing to assist whoever wants to have a shot a being the n/l Editor. With all that said we do have a bundle of good contributions for this issue: Harvey did not let us down and is here with a number of interesting things; Guido tells us about his adventures in MSDOS-land; Vince is along with two nice articles - adding a Serial Port to the ZX81, and one about something called a Cross Assembler; Gerd relates his visit to a Sinclair QL Fair in Germany this summer; Marie comes in with a really neat article for all those who just aren't sure where they are; the PCCFA is along with notice of their up-coming fair; and we have a big bunch of other good stuff including an article about Sir C's latest forays as well as some very interesting reprints from the exchange n/ls. All in all it should be a fun time.

Thanks, it's been fun, ttul.....Rod

****

BITS & PIECES.......................

...it is reported that the Milwaukee TS Fair was very well done with a small but very enthusiastic crowd of about 120 turning out for the two days in early June. Apparently the vendors did better business than the previous year at the Capital Fest in Washington, D.C. There is talk of next years event being back in the mid-west.
...Jack Dohany wrote to advise that his constant meddling with WordMaster has resulted in Version 2.0. The original WM blow my socks off when I came upon it in Australia but little did I realize what would result after introducing Jack to it at the D.C. Fair. Jack has done a superb job of upgrading an already fine program. Now it's only incredible!

...would you believe a CD-ROM for a Sinclair machine? Word out of Britain says that a software house has put 30 of their best Spectrum games onto a standard CD which is loaded into a Spectrum from a standard CD player. The kit includes the CD player to Spectrum connecting cable, cassette tape of MC program to boost baud rate of the Speccy to match the CD, program instructions for the 30 games, and the CD.
...UPDATE MAGAZINE has a new captain. After three years of being a one-man-band and now looking forward to the chance to resume his other loves, Bill Jones has handed the helm over to Frank Davis of the Indiana Sinclair Timex User Group. Frank has been the editor of the ISTUG newsletter and also has been responsible for the previous Mid-West TS get-togethers. Frank and his lovely wife Carol together will be bringing us UPDATE MAGAZINE quarterly starting with the July'90 issue. Everyone interested in Timex and Sinclair machines should subscribe to UPDATE! Only $18.00 US a year (maybe a little more in Canada). Write to: UPDATE MAGAZINE, P.O. Box 1095 PERU, IN 46970, U.S.A.
...Nigel Serle has come up with a rather neat marketing plan. If one is in the market for any kind of computer hardware or other stuff one calls Nigel for the best price. He takes your credit card number and quotes the lowest price available for the product. If you want to go with his price you pay Nigel 1% of the total as his fee and he puts you in touch with the dealer offering the price. If you don't you say no thanks and hang up with no further cost to you. Apparently Nigel maintains a very large database of products, dealers and prices from all over the continent.
...the latest issue of Sinc-Link the n/l of the Toronto UG was received - in my view it has to be the most professionally produced newsletter around. Chock full of new material, with emphasis on the LARKEN dos.. Latest issue had to be THIRTY-FIVE pages!
...the Johnson City, NY, TS User Group has gone over to MSDOS. Their n/l, SINCUS, has folded after eight years.
...The Las Vegas UG's n/l still looks good,(produced on an MSDOS machine), but is more MSDOS than Sinclair.
...the Plotter, the n/l of the CCAT/S

2

UG reports they have started an MSDOS sig and will devote space to it in future n/l issues.

...it is reported that Larry Kenny is still working on his DTP program and that it will utilize the Sequential Random Access facility of his LARKEN DOS 3.0. The DTP program will include a 55,000 word spelling checker. Hope Larry runs his docs through the spelling checker.

...the grandaddy of TS user groups in North America, the Sinclair Timex User Group of the Boston Computer Society has folded due to high costs of belonging to the BCS and sagging interest. BUT, like the Phoenix, they have arisen from their own ashes as the New England QL User Group.

...word from across the pond indicates that all is not well with the Spectrum emulating SAM computer, extensively reported on here in the April/89 issue. It is said that after a rocky introduction of the machine, sales were not as brisk as was hoped resulting in Miles Gordon Technologies calling in the receivers. Hope this is not so as the SAM was the first exciting thing to come along on the British computing scene for a long time.

...now this one is a little hard to understand but a British computer mag reports that the Danish Sinclair User Magazine "Sinclair Freakeren" mentions the existence of a ZX-81 emulator for the Atari ST. An ST that thinks it's a 2K ZX? Bizarre! Same magazine reports that a Hard Drive is now available for the Spectrum.

****

RENEWING MEMBERS:

Since last reported the following members have renewed:

Aurel Boisvert,Ken Gamey,Rusty Townsend
Neil Trylsson,Warren Jackson,Harry Slot
Real Gagnon,James Hunkins,Ken Abramson,
Harvey Taylor,Hugh Polley, Eric Sakara,
Bob Barnett,Doug Jeffery,Ike Walker,
Marie Kendall,Chung Chow, Ken Grant,
John Sampson,Al Albrecht,Seward Warner.
Lionel Keeping,Larry Anderson,

NEW MEMBERS:

John Regan, Kelowna, B.C.
Nick Nicholls, Terrebonne, Que
Ron Desind, North Miami, Florida

****

...meeting dates

MEETING DATES FOR 1990-91:

September 14
October 12
November 9
December 14
January 11
February 8
March 8
April 12
May 10
June 14

We were back downstairs again for this meeting 'cause the kids took over upstairs again. At 19:25, when Gerd arrived, there were 12 stalwart sorts present. The meeting was subtly shifted towards telecomm; Glenn Read had a monstrous old terminal he had brought in. The joke was the built-in microwave oven for the midnight hacker.

Early in the meeting it was mentioned that there was an interesting article on hacking in the March/90 Harper's magazine. Harry Slot relayed the difficulties of using a modem with a party line. The old "neighbour who thinks the phone is broken 'cause of the modem tones" syndrome. Rusty Townsend told of the difficulties he was having getting a 2400 baud modem to work with some BBS's. There was a lot of discussion of error protocols and modem standards while trying to suss out an answer. Harvey passed on a modem booklet [Data Communication Concepts] which he got free from USR through Byte magazine.

There was an article in the Vancouver Sun about User Groups which included a few quotes from Gerd. Gerd enjoyed giving us his version of the interview as opposed to what got printed in the paper.

Rusty told us about the computer fair in Kent, Oregon. There was a discussion on the PCCFA.

Rod Humphreys did not make the meeting, so there was no Editor or Treasurer's report.(Bad back popped up, or is that out?...Ed.)

The hardware SIG reports that not much is going on. An eprom eraser & a universal power supply have been built.

Harry reports the 1000 library is in "a hell of a mess." There are tapes missing. He is sorting the tapes before producing a listing. Gerd says the book library is looking for lenders.

Vince told us about the Sinclair program section on the Frog Hollow BBS [(604)469-0264]. He is putting files up there constantly, I notice. This report turned into a general discussion on BBS's.

At about this point, Glenn Read fired up his terminal with a null loop and started playing with it. As one-on-one conversations became the rule, the meeting evolved into a gabfest around the hardware.

It was somehow so very anti-climactic. During the preceding month I have had several "what is going to become of VSUG" conversations and I had the impression that the club was going to unravel this month. Well it didn't happen. As a matter of fact, the topic was not even raised. As another matter of fact, it is now appropriate, I believe, to raise the question of just what VSUG is going to evolve into? Further, the fact that Rod is going to do one final ZXAppeal, brings a certain urgency to the matter. Whether this is simply a willful blindness which will pass or a recognition that we have generated a rather unique group of electronics enthusiasts who have much to share, it is undeniable that the Sinclair component of our raison d'etre is receding. During meetings it is not uncommon to see Osbornes, KayPro's & Harry's hardware; while in our homes nearly everyone has MS-DOS, CP/M, Amiga or Atari equipment.

For these reasons, I am brought to the ultimate heresy for a mere scribe; namely reporting not only what happened, but also what was thought.

(This latter portion will be called the Virtual Minutes, in deference to my dearly departed memory which will be paged in from disk momentarily.)

When I arrived, there were a dozen or so folk sitting around the table. We were upstairs in the boardroom again. Most of the meeting was of an informal nature; groups of two or four pursuing particular topics.

When Gerd arrived at 19:58, there were 14 hardy souls present. The first item Gerd raised was the upcoming non-PCCFA fair at MacPherson Centre. How was it? Gerd also brought with him some roll-ends of FAX paper to dispense to the masses.

Rod Humphreys says we have $1K+, "All the money we need & everything is fine!". As Editor, Rod is doing one more newsletter and that's it. You may send your articles to Rod via Frog Hollow BBS (604)469-0264.

Harry Slot of the HW-SIG brought in a universal power supply he'd crafted. It is difficult to capture the essence of a Harry Slot creation. First of all, it is mounted in a custom-made case - Harry has a metal workshop in his backyard. The back of the case is extensively heatsinked [heatsunk?]. The front of the case sports dual power meters as well as an LCD screen voltage readout. There are numerous ranges to choose from, both variable as well as fixed voltages. The impression created is that of overwhelming attention to detail.

As 1000 librarian, Harry has been going through the tapes. There was a seven page handwritten list of titles passed around. He reports many missing. He is also greatly displeased with the "quality, or rather the lack of same" of the library. Rod H. suggested that folks restock the 1000 library from their own collections.

At this point, the informal meeting broke through and various folks got into their personal interests. Guido had his Osborne. He is looking at setting up a BBS when he gets an IEEE-488 bus controlled hard disk.

I got to the meeting late, cause Glenn Read & I got to talking. When we arrived at 19:55, Gerd opened the meeting. There were 12 stalwarts present. Gerd started off with the Great Wes Yale auction. This went on throughout the meeting. Wes had a bunch of 2068 stuff to be disposed of & various homes for these items were found, with only a little haggling & very few outright threats.

The hardware SIG is going to have custody of the club ZX81 system.

Rusty Townsend missed the Kent swap meet after all; the lure of Reno caught his eye...

There was some discussion over the fact that Rod Humphreys is stepping down as Editor. Rod is discouraged because there is a chronic lack of material to put into the newsletter. Some people seem to think that things will just go on even if they don't do anything. There was a rounbd of applause for Rod, who was absent.

Marie mentioned that she has joined the TO club. They have a good 2068 library. Their newsletter, SincLink is supposed to be quite good.

The auction was taken up in earnest. Wes came out of it $80 richer. No meeting until Sept. 14.

Sinclair QL - Alive and Well in Germany
....Gerd E.

Thanks to Harvey's invitation, which he'd passed on to me during our last club meeting, I attended the 2nd International QL meeting on June 23rd in Bedburg Castle, Germany on my recent trip to that country. The show was held in an old castle and was well attended. I was welcomed as an invited guest by Mr. Detlev Lazar, meeting organizer and QL magazine publisher/editor, and his staff. The meeting was well set up in five areas: reception (admission charge collection and club magazine sales); vendor tables (12 vendors, soft- and hardware items); club tables (10 different demo setups); lecture room; and bar. "QUASAR", the club magazine of the Sinclair QL User Group e.V. (Germany), is published quarterly, the most recent issue being #23, dated June 20,1990. It contains 50 pages average, is bound in a soft cardboard cover and contains editorials, articles, hard- and software reviews, discussions of club interests, reader dialogues, and a small ad section. It is easy to read and well laid out. The magazine is published in German and copyright protected. Interested readers please contact:

SINCLAIR QL USER GROUP e.V.
Sophienstr. 9
4040 Neuss 1
West Germany

Some News highlights from the 2 most recent issues:
-Brand new QL's c/w Psion software package available for £65 from the British firm EEC (phone 44 753 888866)
-Production of QL microdrive cartridges has ceased
-New QL ROM available - it is called "MINERVA"

I met two gentlemen from Miracle Systems who were selling their wares at the meeting and purchased a parallel printer interface from them for my QL. The European serial ports require a never-seen-here in-line 6 pin plug with side clip hook for retention. I was provided with the pin-out for a DB 9 connector and was therefore able to adapt the interface to DB 9. My FUJITSU printer in Epson mode failed to respond, my ADMATE thermal printer works, but refuses to respond to any control codes. I also tried to find a "SCHOEN" QL replacement keyboard, with real keys, which had been made in Germany but found that they are no longer available. There is an ad for a secondhand unit in the latest QUASAR - I did not make an enquiry. There is a 5 page article in QUASAR No. 22 on building your own A/D converter which connects to the QL rom port. If there is enough interest in this project from VSUG members, I'll check with the publisher on their policy re. translating it into English.

SHOE

Playing with Electricity

—June 18/90
—Harvey Taylor

I have been wondering about writing an article about online mannerisms which might puzzle the beginner. With Rod only doing one more issue, it would seem that if I am going to do it, Now is the time.

As the computing community moves toward a WorldNet, a cyberspace type of construct in which any computer can tap into world wide data networks, (probably via an extended ISDN), there will be changes in the sorts of data presented to the user. Meanwhile we have primarily a 7 bit character (0-128 ascii) text network. New users carry various fears into their interactions with these systems; fear of wrecking the machine, of damaging the network, fear of looking dumb. Probably the best advice is that on the outside of the Hitch Hiker's Guide to the Galaxy ie. Don't Panic.

One of the characteristics of communicating online is that you don't have any independent method of determining the other person's emotional state. All you have to go by is the words on your screen & sometimes words are ambiguous or in some way unintentionally inflammatory. It is very easy to get into quite heated arguments, called flame wars, as a result of this.

One method which the online community has generated to deal with this situation is the smiley face. :-) This is supposed to represent an emotional state via two eyes, a nose & a big smile turned sideways. When somebody says something potentially cutting which is meant in a humorous manner, the intent can be tempered with a smiley face. However people being people, a few other variants have been generated.

:-)	Humor - this is the one that started it all :-)
:)	Ear to ear grin
(:	Same, but for people that are backwards
:{	Mustache
:-]	Smiling robot
8)	Frog
>:-)	Devilish smile
¦-)	Wearing shades
:-))-:	Masking theatrical comments
:<)	For those with hairy lips
:<)=	For those with beards too
:/)	Not funny
'-)	Wink

There are alot more & you can find files full of them online. Another idiosyncrasy which throws beginners is the penchant of modemmers to use acronyms. The only reason I can see for these is that a lot of computer users are poor typists. ;-)

TOGOYC	- the out group of your choice	TTUL	- talk to you later
HHOS	- HA HA ONLY SERIOUS	CUL	- see you later
LOL	- laughing out load	WRT	- with regard to
ROTF	- rolling on the floor	IMO	- in my opinion
b4	- before	IMHO	- in my humble opinion
CU 18tr	- see you later	IMNSHO	- in my not so humble opinion
MORF	- Male or Female?	TINAR	- this is not a review [Bix]
TTFN	- tata for now	TANSTAAFL	- there ain't no such thing as a free lunch
OIC	- Oh, I see	MCIBTYC	- my computer is better than your computer
rehi	- hello again		

6

From Timex to IBM: The confessions of a User.
....Guido Vieira

Yes, it's true. I've got an IBM. My own IBM. There are now eleven computers in our household. Four Timex/Sinclair 2068s (only one works), three Apple IIs (only two of work), an Osborne I (the first portable computer ever made, running on operationg system many times better than MSDOS called CP/M), a Radio Shack MC-10 (A small color computer, it's only virtue being that it has an RS-232 interface), and two IBM AT Clones. Both have 1 meg of RAM. Both have two disk drives: a 5.25"and a 3.5", both high density, on one, and a 3.5 normal density on the other. Both run at around 12mhz. The catch is that one cost over $1200, and the other just under $300.

Ok, ok. I'll admit that the one my father purchased has a VGA card and monitor (for all those uninitiated into the MSDOS world, that means graphics (in this case) of about 800 x 600 by 256 colors, enabling to display gorgeous girls or guys (depending on your preference) or fancy cars in full photographic quality. Note:That's actually the only thing that impresses me on an IBM system. The ability to display all of those... ahem...pictures that I occasionaly run accross.), and a 40 meg hard drive. Oh yes, a power supply that works too. But that's it. For the price I paid, I even got a mouse. And, of course, as John Brohman recently pointed out in a message to me on the Frog Hollow BBS, if I "get all of my softwear through the usual channels like a good T/S user, then [I'll] end up paying only for the hardware". I won't say any more, since this is going into print...

Anyhow, many of you might be wondering exactly why I am telling you all of this. So, I've got an IBM. I'm a turncoat. I've gone and done the unspeakable. I've finally broken down, in the face of new and ultimately more expensive (notice I don't say better) technology, and gone to a (don't say it!) 16 bit machine (ARRRGH! I told you not to say it). But, let's face it, I have, do, and always will, hate (with a passion) IBM related computers and products. I have always despised their hack and slash approach to things, and certainly never appreciated a machine that was character based (the Osborne was, but it ran CP/M, and this has many, many, philisophical implications which I won't get into right now. (altough I might refer you to a text called "Zen and the Art of CP/M BIOS Calls")). What I'm trying to say is......what I mean is..... I'm not a turncoat....well I am....but I'm not..the darn things are cheap! ...well read this and figure it out for yourself...

....It all began on the Sinclair Meeting on May 11th. Some of you may notice that the 11th comes just before the 12th. A somewhat signifcant point in this case. Anyhow, I had brought my trusty (and infinatly wise) Osborne to the meeting, where it sat attracting some attention. I mentioned to Harvey Taylor that I was trying to get a BBS up (as I have been for the past four

or five years!), and that I was looking at softwear and a hard drive interface for the machine. This drifted into a casual conversation about different computers. I expressed my fanatical devotion to the Macintosh. At one point, however Harvey said something like "but then, you could always break down and get the unmentionable...". I laughed. He meant an IBM, and I had this picture of me at an IBM keyboard. I laughed at the unthinkable.

On May 12th I found myself at the swap meet. This was a huge skating rink filled with computer vendors and the products they wanted to get rid of. I was happy that day, because I had a line on a Kaypro II (which I was going to have a look at and hopefully buy), but I thought that I'd just drop by and have a look at the swap anyway.

Much to my disappointment, it was all IBM with an itzy bit of Macintosh splattered in places. I was annoyed. No CP/M stuff. Then I noticed the prices. Oh the prices! My Timx/Sinclair instincts kicked in (ie: when you see a good deal grab it, regardless of how much junk you have in the house). I had brought with me $200 for the Kaypro II, but asked myself one question: Could I, with only $200, actually put together a complete IBM system? I looked around. Serial Cards were going for $1. 360k disk drives were going for $4. Cases were being sold at $25. Keyboards for $6. My mind went into overdrive (I'm sure lucky I took that Calculus course this term....). I figured that with a little wheeling and dealing, not only could I put together an IBM system, but I could make it a 80286 based machine as well and with this information, my brain reeled. I spent the first hour appraising, and seeing if I could actually put a cheap machine together. By the time I was done, half of the things I had looked at, were already gone, so I quickly scrambled to get my components.

I first got the mother board. Since everything was being sold in "as in" condition there was no guarantee that anything would work. The solution: Buy in large quantites. The MB was $50 plus $15 for a second, identical board, so I could trouble shoot it. $25 for the casing, which had a 5 1/4 1.2 Meg disk drive attached to it. What a deal! I couldn't pass this one up. Ram: 512K for $30 (I later bought 1 meg for $50 from another place). The video and drive controlers I bought new (but at dirt cheap prices anyways), as I figured that this would aid in trouble shooting. I also couldn't pass up the offer to get a 1200 baud modem. $10.

And so there I was. I had a whole system in spare parts, blown slightly under $250 bucks into it, and I had no idea whether it would work. But I was happy. My mother wasn't too happy, and thought I had wasted my money (until the screen lit up, and then she was happy, and my dad was (I could tell), somewhat envious because my machine not only clocked nearly as fast has his (he's going to read this article, and I love to rub things in), but I also got the fun of opening it up

PLAYING WITH ELECTRICITY

-by Harvey Taylor

MultiSync Monitors

In the last while I have been shopping for a MultiSync monitor for my Ami. I decided to go for a multisync in hopes that I will be able to use it with any future systems I may own. The table below has a lot of holes, but I thought you might find it of use if you are doing something similar.

I'm going to plead laziness in defining all the categories of the table. Not everyone shops by specs. The references will get you started if you want to know what these numbers mean. For a quick read, two important ones are bandwidth (the larger the better) and dot pitch (the smaller the better). You should try to get a look at any prospective monitor being used on a system similar to yours.

References

The CRT Controller Handbook - Gerry Kane
The TeleVision Engineering Handbook - K.B. Benson
DTACK Grounded #43
PC Magazine, May 31/88
PC Magazine, May 16/89
Byte, Sept/88
Byte, Feb/88
Computer Buyers Guide & Handbook, Aug/Sept/88
VPCUS Newsletter, April/88
Computer Shopper, July/87
Computer Shopper, Feb/88
Amazing, Oct/88
PC World, Dec/88
Modern Electronics, Jan/90
PC Magazine, April/90
PC Magazine, May/90
PC World, May/90

Manufacturer	Model	Type	Size	Resolution	Dot Pitch	Vert Freq (Hz)	Hor Freq (KHz)	Bandwidth (MHz)	T/S Base	OTHER	List Cost	Discount
CBM	1950	MSYNC	14D	1024X 768	.31	50-80	15 - 36	30	Yes		US$799	
MITSUBISHI - D SCAN	AUM1381A	MSYNC	14H/13 V	800 X 600	.31		15.7 - 36					
	AUM 1371A	MSYNC	13	800 X 560		45-75	35	30	OPTIONAL		US$ 900	
	HL6605TK	MSYNC	16H/15V	1024 X 768	.31		30-64					
	HN3905ADK	MSYNC	20H/19V	800 X 600	.31		15.7 - 36					
	HA6905TK	MSYNC	20H/19V	1024 X 768	.31		30 - 64					
	FA3415	MSYNC		1024 X 768	.28						US$ 1015	
TATUNG	CM 1495	OMNISCAN	14	800 X 600	.31	47 - 73	15 - 35	30	YES		US$ 875	
NEC	MSYNC 2	MSYNC	13	800 X 560	.31	50 - 60	15.7 - 35	30	OPTIONAL	(Rep by 3D)	US$ 800	
	MSYNC 3D	MSYNC	14	1024 X 768	.28	50 - 90	15.5 - 38	45			US$ 1049	
	MSYNC 4D	MSYNC	15									
	MSYNC 5D	MSYNC	20									
	MSYNC PLUS	MSYNC	15	960 X 720	.31	56 - 80	21.8 - 45	30 / 55	YES		US$ 1400	
	MSYNC XL	MSYNC	20	1024 X 768	.31	56 - 80	21.8 - 50	65	YES		US$ 3200	
SONY	CPD1302	MSYNC	13	900 X 500	.26	50 - 100	15.7 - 35	25	OPTIONAL		US$ 900	US$ 707
PRINCETON	ULTRASYNC	MSYNC	12	800 X 600	.28	45 - 120	15 - 35	30.	YES		US$ 850	
THOMPSON	4375M	MSYNC	13	800 X 560		45-75	35	30	YES		US$ 900	
MICROVITEC	1019/SP	AUTOSYNC	20	1024 X 580	.31	40 - 100	31.5	40			US$ 2200	
	1019/LP	AUTOSYNC	20	1024 X 1024	.31	40 - 100	31.5	40	YES		US$ 2400	
CONRAC	7250	MSYNC	19	1024 X 600		40-60	37	40			US$ 3000	
ELECTROHOME	ECM 1310	MSYNC	13	720 X 540		47-85	34	30			US$ 1200	
	ECM 1312	MSYNC	13	720 X 540		47-85	34	30		LONG PERS	US$ 1200	
	ECM 1910	MSYNC	19	1024 X 512		47-85	34	30	OPTIONAL	LONG PERS	US$ 2800	
LOGITECH	TE 5155	AUTOSYNC	13	800 X 560		45-80	35	40	YES		US$ 700	
NANAO	8060S	FLEXSCAN	13	820 X 620	.28	50-80	35	30	YES		US$ 920	
	9060S	FLEXSCAN	13	1024 X 768	.28	50-80				YES	US$ 1059	
	9070S	FLEXSCAN	16	1024 X 768	.28	50-80	20-50					
TAXAN	770 PLUS	MULTIVISION	14	640 X 480		50-90	35	30	OPTIONAL		US$ 800	
SAMSUNG	CN 4551	MSYNC	14	720 X 480	.31				YES		US$ 429	
SEIKO	CM-1440	MSYNC	14	1024 X 768	.25				YES		US$ 899	
RELISYS	RE5155	MSYNC		800 X 600	.31				YES		US$ 799	
PANASONIC	C1391	PANASYNC		800 X 600	.28				YES		US$ 899	
LEADING TECHNOLOGY	1432M	MSYNC		1024 X 768	.31				YES		US$ 495	
AMDEK	AM/738	SMARTSCAN		1024 X 768	.31				YES		US$ 835	

The ZX/TS Serial Link

by V. Lee

There are many advantages in adding a serial port to a ZX81/TS1000. It allows the computer to use other devices which have a serial port, such as modems, eprom programmers, serial printer etc. And since computers have serial ports, it must also be possible to connect two ZX/TS together, each thinking the other was a modem. Or connect a ZX/TS to a QL, an Apple or an Amiga. How about going mainstream and connecting it to a PC/XT/AT compatible computer or to a 33MHZ 80386 machine?

The trick is to know which pins to connect. There are different types of serial ports, RS422, RS423, RS449 to name a few, but the ones that we usually see in the consumer market is the RS232. And even within this group, some manufacturers have chosen their own types of connectors which creates different pin out arrangements. To keep some sort of standard, our project will be to link the ZX/TS to a PC-compatible computer.

The requirements for the PC is that it must have a RS232 serial port and a communications program. If you're looking for software, the Vancouver Public Library down on Burrard and there may be others, offer a Free/Share Ware service called "PC-Sig". Just bring in your formatted 5 1/4" 360K or 1.44M diskettes and get copies of what you need. You might also want to pick up a word proccessor program and a program called "PseudoSam Cross Assembler 80Z and 85."

The requirements for the ZX/TS is that it will be running the communications program ZX-Term#80 and using the Westridge TS2050 or equivalent, RS232 serial port. Other serial ports can also be use such as the Memotech and the Byte-Back, but all of the examples will be given for the Westridge. In additon we will be writing some of our own routines and adding in a memory upgrade.

What will this allow us to do?
- Store ZX/TS programs from cassettes to floppies.
- Save ZX/TS ramdisk contents to floppies.
- Use the PC to call ZX BBS, taking advantage of the higher baud rates and allowing more than one program to be down/up loaded. Transfer programs over to the ZX/TS later.
- Write big relocated ZX/TS machine code programs through the PC. Or use HOT-Z to disassemble M/C programs into text files for rewritting on the PC.
- Mini desktop publishing for writing article for the club newletter. Send COPY, LLIST and LPRINT contents to PC for editing and for inserting text.
- Transfer ZX/TS BASIC programs to the PC where it can be edited to run.

We'll also look at how to program the serial port and try to write our own "sort of" 1200+ baud terminal program. And we'll even change some of the ROM routines.

I should stress a warning at this time that this is not a beginner's project as mistakes will be quite costly. A second problem is that although there seems to be a standard, manufacturers are not forced to follow.

With that in mind, now some theory. Why and What is RS232? It is used to minimize errors in data cable transmissions caused by electrical noise and cable capacitance. This is accomplished by using a wider voltage swing. A logic high is -3 to -15 volts while a logic low is +3 to +15 volts.

There are several important key points to remember;

1. Serial equipment are divided into two groups, DTE, data terminal equipment and DCE, data communications equipment.

general rule :

DTE : originate or receive digital information	DCE : connect directly to telephone line
computers video display terminals serial printers	modems multiplexers
DB25P pin 2, -3v to -15v	DB25S pin 3, -3v to -15v

2. The DCE serial port is the exact signal opposites of the DTE serial port, even though each pin on the DCE connector uses the same names as those on the DTE. This allows the DCE connector to be connected directly to the DTE, pin for pin.

3. The DTE uses a 25 pin plug connector called the DB25P while the DCE uses a 25 pin socket connector called the DB25S.

9

4. Of the 25 pins, below is a list of all of the signal lines required to connect DTE to DCE. The other pins are either unassign or not used in microcomputer applications. These pins are numbered on the connectors.

This chart would be an example of connecting an auto answer modem to a computer. Pin 22 is not required if the modem is not auto answer. The directions of the signals is also shown.

PIN	to DTE	to DCE	DESCRIPTION	SYMBOL
1			frame ground	FG
2		-->	transmitted data	TD
3	<--		received data	RD
4		-->	request to send	RTS
5	<--		clear to send	CTS
6	<--		data set ready	DSR
7			signal ground	SG
8	<--		data carrier detect	DCD
20		-->	data terminal ready	DTR
22	<--		ring indicator	RI

5. A more accurate method of identifying the group is to measure the voltages on pins 2 and 3 with respect to ground on pin 7. DTE will show 3V to 15V on pin 2 while DCE will show it on pin 3.

6. Connecting DTE to DTE means that the cable will have to direct the signals from one connector to the proper points of the other connector. Below would be an example of connecting a computer to a serial printer. This chart also shows the directions of the signals.

PIN	SYMBOL	TO DTE	TO 2ND DTE	PIN	SYMBOL
1	FG			1	FG
2	TD		-->	3	RD
3	RD	<--		2	TD
4	RTS		-->	5	CTS
5	CTS	<--		4	RTS
6,8	DSR,DCD	<--		20	DTR
7	SG			7	SG
20	DTR		-->	6,8	DSR,DCD

We can make this project simpler by not using any of the "handshaking lines." Our serial port will be hard wired into thinking that the other port is always ready. The only signals that we will required then is pin 7 for ground, pin 2 for transmitting data and pin 3 for receiving data.

The first order of business is to obtain a TS2050 or equivalent, RS232 serial port. Rather than converting a perfectly good modem, there were many surplus boards available at one time that you might want to track down. Jim Horne had quite a few the last time I spoke with him. Wilf Righter has designed an excellent equivalent circuit which would make a great project. (Hint for the hardware group.)

The Westridge TS2050 modem actually consists of two parts. It contains a serial chip which formats the 8 bit wide data to flow through a single stream and a modem chip which converts this stream into tones which can travel through the telephone lines.

To convert the TS2050 into a serial port, we tap the required signals from the 8251 serial chip and feed them to level translating chips which changes them to RS232 levels. Using the new MAX232 IC helps simplify the construction. It contains two output transmitters and two input receivers with its own built in voltage converter. The completed port would be DTE because of the directions of the handshaking signals if they were used.

We can also program the MC14569 counter to allow the port to operate at 300, 600, 1200, 2400 or 4800 baud. This topic will be covered in the next installment but here's a brief

explaination to allow you to experiment. Both ZX-Term*80 and Mini Xmod automatically sets the serial chip's mode word to 79. This establishes the serial protocol to 8 data bits, 1 stop bit with no parity and its internal "divide by clock" to 64. Changing the dip switch setting for the MC14569 will allow the port to operate at 300 or 600 baud.

mode word (Dec)	dip switch (Bin)	baud rate
77	01101000	9600 unreliable
78	11010000	300
78	00110100	1200
78	00011010	2400
78	00001101	4800
79	00110100	300
79	00011010	600

But if we use the mode word 78, this still allows the same format but sets its internal "divide by clock" to 16.

Changing the dip switch setting, the port can now operate at 300, 1200, 2400 or 4800 baud.

At 9600 baud we run into difficulty as errors appear in the exchange. More experiments will be needed in this area. Here we use the mode word of 77 which sets its internal "divide by clock" to 0.

As a general rule, the ZX/TS must be in the fast mode in order to operate without error at baud rates higher than 300. We'll look into this situation more closely in a future article. Unfortunately the modem circuitry itself has been designed to operate only at 300 baud. We'll report if we can somehow improve on this.

There is a wiring error on some of these boards. 74C00 pin 11, should be connected to MC14412 pin 12 while 74C00 pin 12, should be connected to 8251 pin 23. I've come across a couple of boards where these connections are reversed which prevents the modem circuitry from working properly.

If you're using the serial port for other applications which might require all of the handshaking lines, another MAX232 IC will be required. Instead of adding the two jumpers, the four handshaking signals from the 8251 will now be brought out to the connector. The traces will still have to be cut. Pin 24, DTR and pin 23, RTS which are outputs will each be connected to a transmitter while Pin 22, DSR and pin 17, CTS which are inputs will each be connected to a receiver. Refer to the above DTE to DCE or DTE to DTE charts for correct pin out and cable arrangements. See the article in the Jan88 issue of ZX-Appeal for additional information. It originally appeared in the May/June issue of Sincus News.

As in the article, a switch can be installed to allow the TS2050 to be used both as a port or as a modem. Just remember to unplug it from the phone line when you are using it as a port since the modem circuitries are still active.

I haven't yet had the opportunity to test a TS2068 with the serial port. But it too should operate quite comfortably at 4800 baud and should operate a 1200 baud modem with no problems at all. "Should" is always a big word.

Next time, we'll look at programming.

fig. 1

fig. 2

THAT'S THE PROMISE OF CLIVE SINCLAIR AND HIS 'HYPER-RISC' PROCESSOR

PARALLELISM FOR ALL?

CLIVE SINCLAIR IS AT IT again. The indefatigable Sir Clive now says he is going to "bring parallel computing within reach of everyone" with a radical processor chip from Sinclair Research Ltd. of London.

Sir Clive says the design objectives include processing 200 million instructions per second, and emulation of any standard processor—including those from Intel Corp. and Motorola Inc.

"There are single-processor computers and there are parallel arrays," he says. "Our new chip is designed to do both." He classifies it as a "hyper-RISC" processor. A feature is "Transputer-like" communications ports that will allow any number of the chips to run in parallel.

"It's a full custom chip, not a gate array, with a lot of new technology. It has custom RAM and custom ROM, and both are far faster than anything that has been done before," says Sir Clive.

"Its basically a 32-bit chip," he explains. "We have put a lot of work into making fast adders and other processing elements, and especially on-chip RAM. We designed it to have a 3-to-4-ns access time. The chip handles its own memory management," Sir Clive says, "and has on-chip video drive and input-output circuits, so it's truly a one-chip solution."

Sir Clive says that "various tricks" allow efficient use of external RAM: "It accesses external memory in page mode. That way it can address multiple banks of memory using just 32 pins and there is no limit on the amount of memory it can handle," he states.

The technique also provides very fast access to program instructions, Sir Clive says. "We can pull off instructions very, very fast because they are only 8 bits long and we can queue them on the chip. Also on the chip we have a very-high-speed ROM for subroutines that can store macros." This on-chip ROM code is what will give its emulation capability, Sir Clive says—the chip could be set up to use the same instruction code as industry-standard CPUs. "We will do with software what others do with hardware," he asserts.

Other features used to increase speed, hold power down, and keep the chip within a 300-by-300-mils die area include the use of "stacked, balanced logic." The design uses logic swings of just 100 mV and claims an equivalent switching speed of 100 ps, although that is achieved by stacking multiple instructions in ROM.

"And on top of that we are using self-timing. It's self-clocking and it runs at its own speed. When it talks to the outside world it's clocked, but internally it runs as fast as it can. And that is a considerable advantage. Normally you design for the slowest possible gate so everything else runs a lot slower than it could do."

Key technology for the device is a 1.0-µm version of the collector diffusion isolation (CDI) low-power bipolar process developed at the Manchester, UK, laboratories of Plessey Semiconductors—work that was started by Ferranti Electronic Components Ltd. before its 1987 merger with Plessey.

"We could not make this chip with CMOS because the charge and discharge times are too high to get the speed and the power consumption would be far higher than the bipolar device," says Sir Clive. "So this really does have a huge advantage over CMOS. Plus, of course, there are far fewer mask layers in the process—the minimum is five for CDI but of course there are several metal layers so its around nine—still very low compared with modern CMOS, perhaps half the number."

No introduction date has been set because the chip, now in first silicon, must go through a few more silicon iterations. However, Sir Clive says he intends to offer the design for licensing and the device for general sale. What Sinclair Research intends to use it for is a closely guarded secret—but the hints are that it is a mass-market personal computer application. **E**

and fiddling with it under the hood (not to say that dad didn't have fun. He put the initial system together, and I fell into my usual role of mad scientist's assistant. However I can't really complain. The thing works). Anyhow, next time (if there is a next time), I'll go into it little more about how you could possibly manage to do the same if you like, and just in time for the upcoming Pacific Coast Computer Swap in September. I'm planning to upgrade to a 386 with 80 meg Hard Drive. And all for less than another $300. Smile.

LATITUDE and LONGITUDE in B.C.

From: M.Kendall

Did you know that every B.C. Hydro power pole bears its longitude and latitude? On every pole there is a small metal plate, located at eye level, containing a series of numbers in two lines. The one behind our house in Vancouver reads as follows:

```
2311     4913     0008
201      534
```

To decode the plate:

The first four numbers tell us the longitude. Since all parts of B.C. have longitude greater than 110 degrees west of Greenwich, the "1" has been dropped. So 2311 means a longitude of 123 degrees, 11 minutes. The second set of numbers gives us the latitude which is 49 degrees, 13 minutes. The third set of numbers in the fiirst line refer to the B.C. Hydro location map and can be ignored.

If you want precise measurements for astronomical or other purposes such as surveying you turn to the second line of numbers. These are correction values, and here, once again, a digit "0" has been dropped , this time from the end of each set. The pole on our lane is 2010 feet west and 5340 feet north of the latitude and longitude described in the first line.

As one second of longitude is equal to 66.6 feet, and one second of latitude is equal to 101.3 feet, to obtain the precise position to the nearest second of arc, divide the appropriate sets of numbers by those amounts.

ie. 2010/66.6 and 5340/101.3

This gives the exact position of the B.C. Hydro pole on our lane as: Longitude 123 degrees, 11 mins., 30.18 secs.
                    Latitude 49 degrees, 13 mins., 52.71 secs.

Our past news-letters have contained some uncomplimentary remarks about the quality of service provided by our postal service.

Now I'd like to say that they can get it together once in a while.

The March news-letter was posted at our local post office on Friday, March 2 at 5 p.m.

Many of our members in the Lower Mainland received it on the following Monday! It was also delivered on that Monday to a member in Parksville (that's a 3-hour drive and a 2-hour ferry ride from here).

You can't expect to get it done much better than that.

I'd like to hear from some of our more distant members as to when they got their copy deliverd.

The March news-letter made reference to an article I wrote on a computer fair to be held in Kent, Wash., USA. Unfortunately it didn't get printed as our Editor managed to lose it.

I did spread the details around to those who attended our March meeting. For those who might like to attend upcoming ones there, here's the scoop.

AM Computer Swap Meet
Kent Commons(a community hall)
525 4th Avenue North
Kent, Washington.
24-hour Info (206)874-8711
9 am to 5pm again on
June 2, Sept 8, & Dec 8.

I drove down with my wife on March 17 to visit the last one, left her for several hours at South Center Mall while I carried on to Kent and happily browsed at the Swap Meet for some time. Saw absolutely nothing in the Timex or Sinclair line but did pick up several items of Apple and IBM-compatible software at about 5% of their original price for myself and some other misguided friends.

Upon my return to South Center, I found my wife hadn't bankrupted me, so we had supper there and then wended our way to the Border and the Customs who allowed my purchases to come in duty-free but nailed my wife for $15 on the $80-worth of stuff she declared.

All in all it was a good day.

Maybe I'll see you at the next one.

As a special witness to
The President's War on DOS Committee,
Bill the Cat reveals his sordid past

— ACK!

"At first, I just did it on weekends, with my friends, you know? We never wanted to hurt anyone. The girls loved it. We'd all sit around the computer and do a little DOS. It was just a kick. At least that's what we thought. Then it got worse.

It got so I'd have to do some DOS during the weekdays. After a while I couldn't even wake up in the morning without having that crave to go do DOS. Then it started affecting my job. I would just have to do it during my break. Maybe a Mode command or two. I eventually started doing DOS just to get through the day. Of course, it screwed up my mind so much that I couldn't even function as a normal cat. DOS got me fired from my job.

I'm lucky today. I've overcome my DOS problem. It wasn't easy. If you're smart, just don't start. Remember, if a weirdo in a blue suit offers you some DOS, just say no."

MSDOS...

Just Say No!

The ZX Serial Link:

Using the Cross Assembler

by V. Lee

There comes a time when once having
learned the basics of machine language
programming, to pursue the quest to write
the ultimate program. For that noble
endeavour, we need to equip ourselves
with the proper tools.

For many years, "Artic Assembler" and
"Hot-Z" were known as the utilites to use
for writing machine language programs for
the ZX/TS. Both utilites has its
advantageous and disadvantageous. Both
also resides in memory which limits where
code could be stored. What if we had a
tool which would not only allow us to
write programs with the editing ease of
the Artic Assembler, but would also allow
us to generate code to any part of usable
memory like Hot-Z, but without any of its
restrictions? The answer, the cross
assembler with the serial link.

Requirements:

1. PC compatible (with serial port)
2. Word Processor (ascii text option)
3. Z80 Cross Assembler (PseudoSam 80Z)
4. Modem program (ascii file send)
5. ZX/TS (w/64K, Ramdos, optional)
6. TS2050 serial port
7. Artic Assembler

One source for a Z80 cross assembler is
the Vancouver Public Library. They offer
a service called "PC-Sig", which is a
collection of PC, freeware and shareware
programs. The utility is called
"PseudoSam Cross Assembler 80z and 85."
This is a shareware program which means
that there is a small registration fee if
you do decide to use it.

The term "cross assembler" is used to
describe this utility because it uses the
PC compatible computer which has a 8088,
8086, 80286, or 80386 CPU, depending on
whether it's a PC, XT, AT, PS/2 etc., to
generate code for the Z80 CPU, which the
ZX/TS has.

Let's begin with a demonstration. We're
going to put together two short programs.
"TS1000 Name" will prints the name "Timex
Sinclair 1000" on the screen and "Screen
Inverse" will change characters on the
screen to its inverse. To make things
interesting, "TS1000 Name" will be
located to address 9017D (Decimal) and
"Screen Inverse" to location 32768D. The
data for "TS1000 Name" will be located to
address 49152D. (Choose different

15

addresses if you don't have 64K.) Use the
word processor to produce this file which
we will call "trial.asm" It is written in
the format required by PseudoSam 80Z.

```
        ;————————< TS1000 Name >————————;
        .org h'2339

initl:  ld b,h'14      ; Set chr. countr.
        ld hl,messg    ; Move ch. pointer.
prnt:   ld a,(hl)      ; Get character.
        rst h'10       ; Print it.
        inc hl         ; Update pointer.
        djnz prnt      ; Do it again until
        ret            ;  messg is finish.

        ;————————< Screen Inverse >————————;
        .org 32768

finds:  ld hl,(16396)  ; Find
        inc hl         ; start of screen.
row:    ld c,24        ; Set row counter.
clumn:  ld b,32        ; Set col. counter.
line:   ld a,(hl)      ; Change screen's
        add a,128      ;   normal
        ld (hl),a      ;   characters
        inc hl         ;   to
        djnz line      ;   inverse and
        inc hl         ;   inverse
        dec c          ;   characters
        jr nz,clumn    ;   to
        ret            ;   normal.

        ;————————< Logo Data >————————;
        .org 49152

messg:  .db h'b9,h'ae,h'b2,h'aa,h'bd,h'00
        .db 56,46,51,40,49,38,46,55,0
        .db 29,28,28,23,00
        .end

        ;————————————————————————————————;
```

The word processor must be able, or
have the option, to generate a pure ascii
file. Any additional code embeded will
confuse the assembler.

The PseudoSam version is different from
most assemblers. It is based on the "Unix
System V" assembler syntax. Notice the
use of lower case letters, colons which
follow after labels and periods which
precede pseudo-ops.

Pseudo-ops are instructions used to
inform the assembler. ".Org <address>"
tells the assembler that the following
code are to be written for this starting
<address>. This allows us to choose where
we want to place our code. We could even
combine more than one program in the same
listing. More information on pseudo-ops
are found on the PseudoSam diskette.

Unlike the Artic Assembler, all numbers
are concidered decimals unless specified
otherwise and instructions are written in

the traditional Zilog format. Notice the "h" used to designate hex numbers and commas used in the instruction "jr nz,clumn".

After this file is produced, assemble it with the cross assembler. Issue this command from DOS,

        a80z trial.asm

which will produce two new files, trial.lst and trial.obj.

Trial.lst contains the program listing from trial.asm with the assembled code and their addresses in their respected columns. If any errors were reported in the assembling, the assembler will also mark its location in this file.

Trial.obj contains just the assembled hex codes arranged in what is known as the "Intel Hex" format. Here's what it looks like (squeezed into 41 columns.)

```
:0B23390006142100C07ED72310FBC952
:103000002A0C40230E1806207EC680772310F923
01
:048010000D20F3C983
:10C00000B9AEB2AABD00382E332831262E370010
16
:04C010001C1C1C00D8
:00000001FF
```

This file is divided into blocks. Each one contains the following information (in this order,)

1. A colon which marks the beginning of each block.
2. A number which indicates how many assembled "program" hex digits are in the block. "00" means the end of the file is reached.
3. The starting address for where the code should be stored.
4. A "00" hex digits. (Not used.)
5. Assembled hex codes in the block.
6. The checksum. This is the two's complement (or if you prefer, the negative value) of all the digits in the block added together. It is used for detecting errors in the file transfer.

The PC will use the modem program to transfer this file over to the ZX/TS through the serial link. The protocal used will be 4300 baud, 8 data bits, no parity, 1 stop bit and using the "ASCII send" method. Each character in the file is sent one at a time until the entire copy of the file is received.

The ZX/TS will require a program which will accept and extract the necessary information from the file. Use the Artic

Assembler to create "A80Z obj File Loader" This program will run when the command "RAND USR 16516." is issued.

```
; ----------------------------------
;                                  ;
;    A80Z obj File Loader          ;
;                       by V. Lee  ;
; ----------------------------------
;   This program will load A80Z's  ;
;   obj files from the PC to the   ;
;   ZX81/TS1000.                   ;
; ----------------------------------

fmode call 0f23   ; Go to fast mode.
init  xor a       ; Clear A.
      ld c,a      ; Clear
                  ;  checksum counter.
      out 77,a    ; Reset
      out 77,a    ;
      out 77,a    ;  the
      ld a,40     ;  serial
      out 77,a    ;  port.
      ld a,4e     ; Set mode, 8,n,1,
      out 77,a    ;  16x baud rate factr.
      ld a,37     ; Set command to start
      out 77,a    ;  communication.

fstrt call recv   ; Search for
      cp 3a       ;  the beginning
      jr nz fstrt ;  of the block.

      call gbyte  ; Is this
      cp 00       ;  the end
      jr z exit   ;  of the file?

      ld b,a      ; Find # of hex digits
      call gbyte  ;  to receive in block.
      ld h,a      ; Find
      call gbyte  ;  memory address
      ld l,a      ;  to load
      call gbyte  ;  the code.

poke  call gbyte  ; Load
      ld (hl),a   ;  the block
      inc hl      ;  of code
      djnz poke   ;  to memory.

      call gbyte  ; Continue only if the
      jr z fstrt  ;  checksum is correct?

error ld a,13     ; Discontinue
      call trans  ;  send.
      ld hl,errm  ; Report
      jr print    ;  error message.

exit  ld b,04     ; Get
echek call gbyte  ;  final
      djnz echek  ;  digits
      jr nz error ; Is checksum correct?

exit  ld hl,downm ; Report dload cplete.
print ld b,12     ; Print
ploop ld a,(hl)   ;  the
      inc hl      ;  message
      rst 10      ;  on the
      djnz ploop  ;  screen.
      call 0f2b   ; Go to slow mode.
      ret         ; Return to BASIC.
```

```
gbyte  call ghex    ; Get
       rlca         ;
       rlca         ;  most
       rlca         ;  significant
       rlca         ;  nibble.
       ld d,a       ; Save it.
       call ghex    ; Get LS nibble.
       add a,d      ; Add MSn to LSn.
       ld d,a       ; Save hex byte.

       add a,c      ; Update
       ld c,a       ;  checksum.

       ld a,d       ; Get hex byte.
       ret

ghex   call recv    ; Get ASCII character.
       sub 30       ; If it is a ASCII no.,
       cp 0a        ;  convert it to
       ret c        ;  its hex value.
       sub 07       ; If it is a ASCII let.
       ret          ;  cvert to hex val.

recv   in a,77      ; Has
       bit 1,a      ;  character
       jr z recv    ;  arrived?
       in a,73      ; Get it.
       ret

trans  push af      ; Save character.
tstat  in a,77      ; Is
       bit 0,a      ;  it time
       jr z tstat   ;  to send?
       pop af       ; Get the character.
       out 73,a     ; Send it.
       ret

errm   "< error detected >"
downm  "download completed"

       ;--------- end ----------;
```

This program also switches the ZX/TS to the fast mode to operate at the higher baud rates. Once the assembled program is loaded or if an error is detected, the ZX/TS is switched back to the slow mode. A message will be printed on the screen to inform if the transfer was successful or not. Remember to set the serial port dip switches for 4800 baud.

What may make this listing hard to follow is that,

1. Hex codes in the .obj file are all made up of two ascii characters. The loader has to convert each pair of ascii characters back to its original hex value.
2. Each hex digit in a block is totaled and then added to the checksum. If the result is "00" (ignoring the carry), then errors did not occur in the transfer.

The program also intializes the serial port and tracks the incoming and outgoing data. If there is interests on this topic, we'll cover it in a future article.

Now let's see if our demonstration program is really loaded into the ZX/TS. Run this BASIC program. Use the addresses that you've selected for the assembly, if you chosed different ones.

```
10 rand usr 9017
15 print
20 gosub 100
30 rand usr 32768
40 gosub 100
50 goto 10
100 for c=1 to 1
110 next c
120 return
```

The name "Timex Sinclair 1000" will be printed onto each line on the screen as it switches between normal and inverse.

What makes this system work so well is that most word processors are designed for editing. Features like block moves, block saves and word searches provides a real creative environment. In addition, the obj loader can also be rewritten to reside in low or in high memory. This allows REM statements in the "BASIC" area to store code. There are some excellent machine code routines available for generating big REM statements. Look for them in the club library.

What in store for the upcoming issues? We'll find a way to get Hot-Z to disassemble code for PseudoSam 80Z, turn the TS2040 into a printer for the PC, and we may even cover how to program the serial port itself. In the meantime I'll be on the look out for your ultimate program.
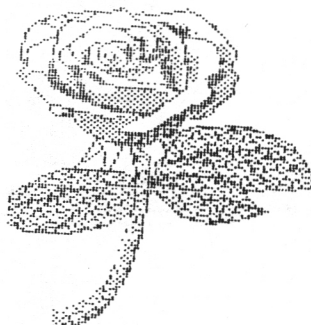
QL MENUE
by
Butch Weinberg
PDS DOC

Well, this time a little something on my "menue" program. I originally wrote it so I could go back and forth between a group of my programs without having to stop and type in individual LOAD commands.

The "menue" program is written in QL SuperBASIC. The following LISTing is the program currently found in our CATUG Public Domain Library (the programs included in the "menu" are also available in the CATUG PDL).

```
 10 REMark menu for multiple
    programs
 15 PAPER 7: INK 4
 20 CLS: CSIZE 2,1: PRINT\ TO
    12; 'MENU'
 30 CSIZE 0,0
 40 CSIZE 0,1: PRINT\ TO 10,
    'Programs on this cart.'
 45 CSIZE 0,0
 50 PRINT\ TO 10;
    '1> Check Wrighter'
 60 PRINT TO 10;'2> Banner'
 70 PRINT TO 10;
    '3> Spin The Bottle'
 80 PRINT TO 10;'4> Listing (fo
r   merging only)'
 90 PRINT TO 10;'5> Poster
    Maker'
140 PRINT TO 10;'9> TO QUIT'
200 PRINT #0;'press the # of
    the one you want'
220 in$=INKEY$(-1)
221 in=in$
222 ON in GO TO 240, 260, 280,
    300, 320, 340, 220, 360
240 CLS: CSIZE 2,1:PRINT\\
    TO 10; 'LOADING'\\ TO 3;
    'CHECK WRIGHTER':
    LRUN flp1_check: END IF
260 CLS: CSIZE 2,1: PRINT\\
    TO 10;'LOADING'\\ TO 3;
    'BANNER': LRUN flp1_banner
:   END IF
280 CLS: CSIZE 2,1: PRINT\\
    TO 10; 'LOADING'\\ TO 3;
    'SPIN THE BOTTLE':
    LRUN flp1_stb: END IF
300 CLS: CSIZE 2,1:
    PRINT\\ TO 10; 'LOADING'\\
    TO 3; 'LISTING':
    LRUN flp1_listing: END IF
320 CLS: CSIZE 2,1:
    PRINT\\ TO 10; 'LOADING'\\
    TO 3; 'POSTER MAKER':
    LRUN flp1_poster_maker:
    END IF
360 PAPER 7: INK 2: CLS:
    CSIZE 2,1: PRINT\\\\ TO 4;
    'OK YOU ARE BACK IN BASIC'
:   END IF
```

Modify this program by changing the names in the PRINT and LOAD statements to correspond to your own programs.

I have further modified a version of this program to access two "screen pages" to LOAD a total of 18 files.

DIRECTORY TO PRINTER
PDS DOC
by
Butch Weinberg

Well, as promised, here is some information on my "pri_dir" program in the CATUG Public Domain library.

"Pri_dir" is a simple utility written in QL SuperBASIC that allows you to send a directory of the contents your disks directly to your printer. It is for people like me who are lazy or who can't type and want to have printed directories of their magnetic storage.

```
10 OPEN#3, ser1
20 DIR#3; flp2_
25 PRINT#3
30 PRINT#0;'MORE?'
```

```
40 more$=INKEY$(-1)
50 IF more$='y' OR more$='Y'
   THEN GO TO 20 :ELSE
60 PRINT#3, CHR$(12);:
   CLOSE#3: STOP
```

If you wish to make directories from one of your microdrives, then change the device name in 'Line 20' to "mdv1_" or "mdv2_" as appropriate. Of course, you could add a PROcedure which allows for more convenient storage device selection.

QL Australia - October 1989

File-Saver Alarm

With the QL's tendency to lock-up (a problem experienced by most owners sooner or later), it's a good idea to periodically save your work to disk or microdrive. That way, you should lose only that work done since the last save.

The simplest approach is for the operator to manually initiate the periodic saves - a simple task which can be easily overlooked for long periods.

The following SuperBASIC program - which can be included in your favourite BOOT program(s) - might be the answer to your problems. It initiates a series of alarms at pre-determined intervals. It doesn't need the current date or time to be set but it does, however, need *Toolkit II* to be running.

```
100 interval=20:REMark Minutes between alarms
110 session_time=5:REMark Session length in hrs
120 times=(session_time*60)/interval:REMark
    Number of alarms
130 dS=DATES
140 h=dS(13 TO 14)
150 m=dS(16 TO 17)
160 FOR x=1 TO times
170   m=m+interval
180   IF m>60 THEN m=m-60:h=h+1
190   IF h>24 THEN h=h-24
200   ALARM h,m
210 END FOR x
```

Adapted from an article by Ed Kingsley in BosTUG Sep/Oct 1989

Programming Tips for the 2068
by Hank Dickson

In honor of the "October is TS 2068 Month" movement, CATS is happy to present the following collection of tips, aids, and utilities which should prove helpful with any TS 2068 programing. These gems come t us from the archives of TIMELINEZ and SINC TIMES:

1. POKE 23609,X
   For keyboard click (x= 1 to 255).

2. POKE 23692,2
   Use before every print for automatic scrolling. Works like the scroll command on the 1000/1500.

3. POKE 23692,1
   Another way to control the scroll. Scrolls 22 lines, then a key must be pressed for every line.

4. POKE 23658,8
   Puts 2068 in caps mode.

5. POKE 23658,0
   Takes 2068 out of caps mode.

6. PAUSE 0
   Pause until any key pressed.

7. POKE 23561,* (* = 1 to 35)
   Time that a key must be held down before it repeats. Prefer 10-15 for text.

8. POKE 23562,* (* = 1 to 5)
   Delay between successive repeats of a key being held down. Use 3 for text.

9. USR 15002
   Try this to get out of an infinite input loop without crashing.

10. DIM A$ (704)
    PRINT AT 0,0; OVER 1; PAPER 1; INK 6; A$
    Allows you to change paper and ink color without clearing the screen.

11. PRINT #1; AT 0,2; "HI"
    PRINT #2; AT 1,5; "BY"
    PAUSE 0
    Prints on lines 22 and 23.

12. LOAD ""CODE
    RAND USR 33792
    For programs that will not load.

13. LET x=INT(x l y+.5)/10 l y
    Use for rounding: x=number to be rounded, y=number of decimal places.

14. 1 DEF FN r(x,y)=INT (x*10 l y+5)/10 l y
    2 INPUT "Enter a number ";a
    3 INPUT "Round off to ? ";b
    5 PRINT FN r (a,b)
    Sets the defined function to the formula used for rounding off:
    a=number before rounding.
    b=number of decimal places desired after rounding.

15. INPUT LINE A$
    Prevents computer from placing "" on screen when waiting for input. Note: Can't use "stop" with this system, but cap-shift-6 will stop. Bug in system.

16. PRINT PEEK 23635+256 * PEEK 23636
    Used to find starting address.

17. PRINT ""
    Gives line feed to print statement.

18. RANDOMIZE USR 0
    Used to reset computer.

19. INPUT AT 22,0; AT 10,0; "input value"; a$
    Input at any position on screen.

20. 1 FOR I=0 to 21
    2 FOR X=0 to 31
    3 LPRINT SCREEN$ (I,X)
    4 NEXT X
    5 NEXT I
    Copy screen to printer without using the copy command.

21. OPEN #2
    Sends all data normally destined for the screen to the printer.

22. CLOSE #2
    Cancels above command.

23. 1 LET C=2
    2 FOR I=32 to 255
    3 PRINT AT 0,0,""
    4 PRINT AT 0,0;CHR$ I
    5 IF CODE SCREEN$ (0,0)-0
    THEN PRINT AT 4,C;
    CHR4 I; LET C=C+2
    6 NEXT I
    Lists characters not recognized by the SCREEN$ command.

24. CLEAR 63255
    Do this first if you plan to use UDG's in a long BASIC program that will include a video mode change. A bug in the system will allow a long

BASIC program to overwrite your UDG's if RAMTOP is not lowered first.

25. POKE 23750,0
If you are using cartridge S/W that can be stopped by the break key, this will allow you to enter your own basic lines into RAM. To return to the cartridge ROMware, POKE 23750,128.

26. POKE 23693,56
To give starting ink color.

27. BASIC STARTS AT 26710.
Explains itself.

28. CAPS SHIFT 3
Scroll two screens when listing.

29. POKE 26711,0
Gives line number 0. POKE 26711,1 to change line 0 to 1.

30. POKE 23659,0
To use all 24 lines (making a program unstoppable), POKE 23659, 2 resets. (Use with "inkeys" only, INPUT resets.)

31. POKE 26710,255
Used to make lines disappear (makes line NO. over 9999). POKE 26710,0 will reset.

32. INK OR PAPER 9
Gives contrasting base color.

33. 'E' MODE/CAPS SHIFT AND A COLOR 1 - 7
Gives ink color in listing.

34. "E" MODE/UNSHIFTED AND A COLOR 1 - 7
Gives paper color (go back to original color at the end of the line; if not, all the lines will be the same color).

35. 1 INPUT "COMMENT"; A$; CHR$ 13; "COMMENT"; B$
     2 PRINT "COMMENT"; A$; CHR$; 13; "COMMENT"; B$
     Example of double inputs.

36. 9000 for I=I to 200
     9010 BORDER 1:BORDER 2:BORDER 3:BORDER 4:BORDER 5:BORDER 6:BORDER 0:BORDER PAUSE 1
     9020 NEXT I:RETURN
     Go sub9000 for a striped border.

37. POKE 23617,236
Used to get a question mark cursor displayed in input statements.

38 Print #0;"COMMENT";PAUSE 0
Use to print on line 24.

PRODUCT REVIEW
SPECTRUM EMULATOR FOR 2068
BY Jack Dohany
PRICE: $15.00 + $3.00 S & H

There have been several Spectrum emulators on the market over the years. It seems that once the subject is covered it is old news. This one simply replaces the original 2068 ROM with an error-corrected Timex Sinclair-Spectrum ROM. The EPROM carries each operating program in separate 16K sections. The selection is by an installed switch.

Mechanically, some work is required on the computer to make the change. The top cover is removed and the switch installation is made in the bottom case next to the right game port. This requires drilling 2 small screw holes plus cutting out a slot for the switch slide.

The original ROM is removed and replaced with the new one. Instructions are explicit for this plus the switch installation and a small soldering job.

There are two jumpers about in the middle of the circuit board labeled W1 and W2 that require cutting a lead of each. The soldered in leads can be removed from the top side but it requires only 3 screws to be removed and a better job can be done from the trace side. A 2 diode prewired insert is provided for replacement. The leads are even nicely bent to fit. This unit has 3 leads.

It is sure nice to do editing of long lines and not have the cursor stumble on the DELETE. Part of this change requires DELETE to be obtained with SS+0 in place of CS+0. Erase is still with CS+0. The cursor rips along as it should.

Thus for $18.00 (order other products and save $3.00) you get an emulator that works with Larken and Oliger drives without software. Now I can use the Larken system in Spectrum mode as the cartridge port is free. These 2 systems can be initialized and used at will in either mode. However, the computer must be turned on in either Sinclair or Spectrum mode.

Send to Jack Dohany
390 Rutherford Ave.
Redwood City, CA 94061 for details and ordering information.

By: Dick Wagner

This little mod. helps clean up the picture and the computer runs cooler, especially if you have more than one peripheral attached.

Using proper care open your beloved 2068. Using figure #1, find the 78L12 voltage regulator. It looks like an ordinary transister (only good for milliamps). Using great care remove it. Make sure the holes are cleaned out. Now install the 78M12 (larger for more current). Radio Shack part #276-1771 about $1.20. Use figure #2, note that it is the **BACK** of the regulator that should be facing up.

Now for the test. Move everything away from the circuit board, without the keyboard attached, power up. Your 2068 should display the copyright notice. If it does not, _power off immediately!!_ Check the orientation of the 7812. If you have a volt meter check the input and output.

After all goes well put your 2068 back together and gaze into your nice clean picture.
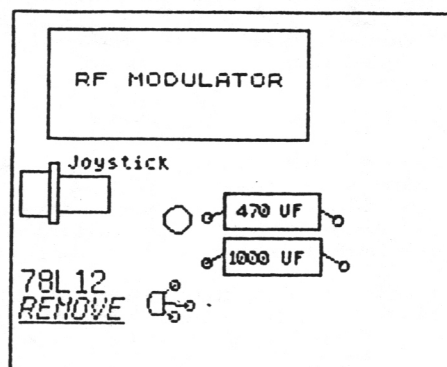
By William E. McKelvey

INSIDE YOUR 2068

Figure #1

Figure #2

Inspired by Tim Stoddard
TIME DESIGNS Vol.3 No.5

MAKING THE 1000/ZX81 EVEN BETTER

by Malcolm Post

Those of you reading this article who are users of the ZX-81 must be the world's most patient people or are already using some of the improvements on your computer.

The ZX-81 was designed to be marketed as an entry-level computer. Thus, the small memory, the use of a TV for a display and the use of a portable, monophonic tape recorder for permanent storage. Many optional add ons are available to the owner who wishes to go beyond the minimal machine. The use of a TV was a reasonable decision because of the relatively high price of a monitor. But, by letting the owner use any tape recorder available, Sinclair lost control of the quality of the resulting system. The tape I/O had to be made slow in order to acheive any degree of reliability.

When I first tried my computer, I read all the instructions in the user manual and those suggestions provided with the commercial programs. When loading the small programs into a 2K memory, there were few problems. As the programs got larger, to fill my add-on, 16K memory, the problem frequency increased. About this time, I joined the computer club and many helpful suggestions were received. I tried various volume settings, tone control variations, removing the "ear" connection when LOADing and the "mic" when SAVEing, but problems persisted. Head alignment was not the problem, either because I could read commercial tapes much better than those I had written. This was my first productive clue towards solving the problems. By examining the output of commercial tapes with an oscilloscope and comparing them with the tapes written by
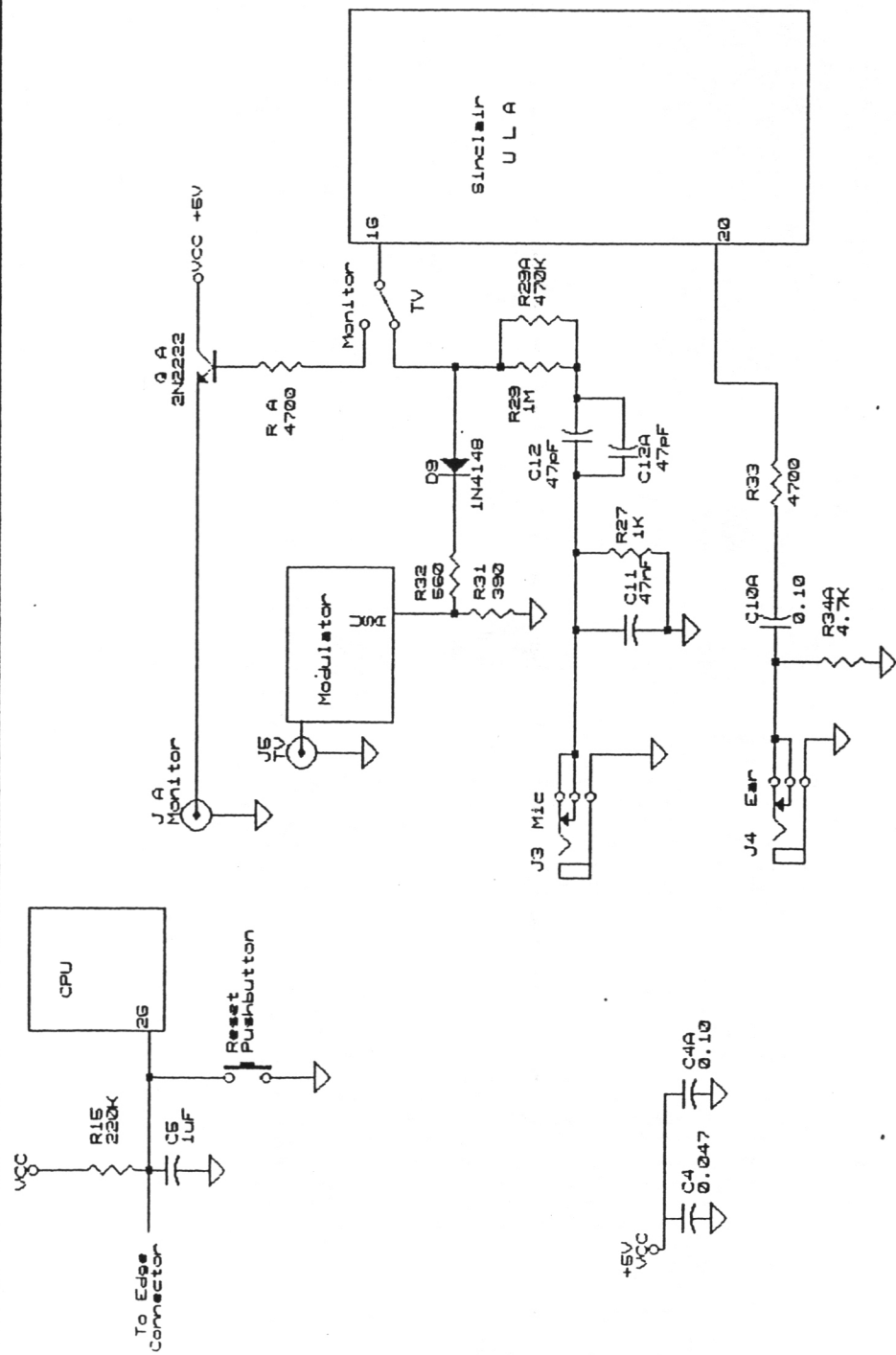
the computer, a nice pattern of square waves showed from the commercial tape with higher amplitudes, versus distorted square waves with much electrical "noise" on the home-grown versions. In an effort to get a high enough amplitude from a weak signal, I was amplifying the noise, as well. Referring to Fig.1 on the next page, the solution was to reduce the resistance of R29 by parallelling it with R29A and adding C12A across C12. These changes permitted me to record at a lower level, where distortion was less and the square wave signal was much larger than the noise.

When reading tapes into the computer, I found the signal was greatly attenuated before reaching pin 20 on the Sinclair Logic Array. This was caused by the low resistance of R34, shunting it to ground, so I replaced the 210-ohm resistor with a 4700-ohm resistor I call R34A. These changes solved all my tape reliability problems. However, the component values used in these changes may not be the best for your tape recorder but should be a starting place to eliminate the problems.
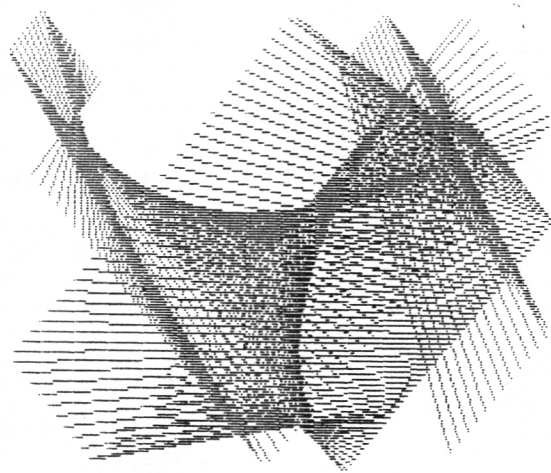
I was also being bothered by the large TV I was using and the jittery, waving lines displayed on it. I obtained a used monitor and attached it as shown on the schematic, using a single-pole-double-throw switch, a resistor, an NPN transistor and an extra RCA jack. This was a great improvement, but there were still a wavy pattern on the face of the tube, when I was using the 16K add-on memory. It turns out that it was caused by the oscillator in the memory feeding back on the 5-volt power buss. Putting C4A across C4 solved this and now the display is steady as a rock.

Another useful change, mentioned in several articles, is to add a reset switch so that it isn't necessary to pull the 9-volt plug or shut off the DC power to clear the computer when it hangs up. This is shown connected to the junction of R15/C5 and pin 26 of the Z80A, which also goes to the edge connector. This should be a normally-open momentary-contact switch.

ZX-81 Component Changes

Size Document Number — A — REV

Date: December 14, 1989 — Sheet — of —

Note: Parts with Suffix A are replacements or additions.

23

```
                        al=-al: LET a=a+al
  110 IF x>=255 OR x<=0 THEN LET
xl=-xl: LET x=x+xl
  120 IF b>=175 OR b<=0 THEN LET
bl=-bl: LET b=b+bl
  130 IF y>=175 OR y<=0 THEN LET
yl=-yl: LET y=y+yl
  135 NEXT z
  137 NEXT Q
  199 REM ART
  200 LET PAPER=INT (RND*7): RAND
OMIZE : LET INK=INT (RND*7): BOR
DER PAPER: CLS : PAPER PAPER: CL
S : INK INK: CLS
  205 IF INK=PAPER AND INK=0 THEN
    GO TO 207
  206 IF INK<0 AND INK=PAPER THEN
 LET INK=INK+3: INK INK: CLS : G
O TO 210
  207 IF INK<>PAPER THEN GO TO 21
0
  208 LET INK=INK+1: INK INK: CLS
  210 LET a=INT (RND*255): LET b=
INT (RND*175)
  220 LET x=INT (RND*255): LET y=
INT (RND*175)
  230 LET al=2: LET bl=2: LET xl=
4: LET yl=4
  240 GO TO 60
  998 STOP
  999 PRINT #4: SAVE "ART.B1" LIN
E 2
  1000 PAPER 0: INK 7
```

```
    2 FOR Q=1 TO 29
    3 GO TO 200
   40 GO TO 60
   60 FOR z=1 TO 200
   62 PLOT a,b: DRAW x-a,y-b
   70 LET a=a+al: LET b=b+bl
   80 LET x=x+xl: LET y=y+yl
  100 IF a>=255 OR a<=0 THEN LET
```

WILL ERASABLE OPTICAL DISKS REPLACE HARD DISKS?

THE INTRODUCTION OF the Next Computer with a Canon Inc. 5.25-in. erasable optical drive as its primary storage surprised many. Erasable optical disks are still two to six times slower than hard disks for most tasks, and Next Computer Inc. has added a 40-Mbyte "accelerator" hard-disk drive to speed things up. Even Next concedes that faster optical drives are needed if optical is to be used as primary storage, although the Redwood City, Calif., company plans to stick for now with the Canon unit.

To challenge hard disks in desktop and file-server machines, rewritable optical technologies must leap several hurdles. One is eliminating "two-pass" writing, in which the drive must perform two passes over the disk—first to erase by writing 0s where the new data will go and then 1s to represent the data. Achieving what is called direct overwrite and shrinking the weight of the read/write head will boost speed. Also, "we need to spin the disk faster, push the data through the [input/output] channel faster, and put both sides on

line," says Jay Bretzmann, senior market analyst at International Data Corp., Framingham, Mass.

"Five years from now we'll see new types of direct-overwrite materials—either magneto optical or phase change," says Gordon Knight, vice president of engineering at Maxoptix, San Jose, Calif. Phase change, an alternative erasable optical technology, still lacks infinite erasability, Knight points out. Rather than rely on magnetics to record bits, in phase change the writing laser heats spots on a metal layer in the disk, changing them from an amorphous to a crystalline state and back again.

"Erasable optical can't compete with Winchesters until the mid-1990s," concurs Barry Donahue, vice president of Toshiba America's Disk Product Division in Irvine, Calif. "Two-pass erasable is niche-market-oriented, and on-pass rewritable is three years away." He says the company is working with two other technologies, but declines to say what they are.

Besides undergoing technological changes, optical drives are headed for smaller sizes. Several companies, IBM

Corp. and Sony Corp. among them, are working on one-sided 3.5-in. units. The disks, which hold about 120 Mbytes, seemed aimed squarely at the desktop.

Notwithstanding the obstacles, drive makers and system manufacturers are optimistic about optical's prospects. "Within the next five years, rewritable optical will meet or exceed the performance of today's hard disks," says Bob Mueller, vice president of Sony America Corp.'s Rewritable Optical Products Division in Park Ridge, N. J. For one thing, hard disks are close to reaching the upper limits of their capacity in terms of density, and optical is not.

To users, optical offers the lure of potentially huge capacity and ease of use for archiving, imaging, and other tasks. "Some studies show that 97% of all the information in the world is off line on either microfiche or paper," says Bill Boles, product manager for Hewlett-Packard Co.'s Greeley Storage Division in Greeley, Colo. "There's a huge opportunity for keeping that data on line in an optical storage medium."—*S. V. T.*

QDOS vs Other Operating Systems

The QL is over seven years old now and many of you well be labouring under the belief that the QL's operating system, QDOS (QL Disk Operating System), may be a little lacking in capability and features. It is certainly true that it doesn't have that many bells and whistles when compared with the latest offerings in the microcomputer world, but the basic system was very impressive for its time. Over the next few months I'll be looking at some of QDOSs features in detail.

So what does QDOS have to offer? The first amazing feature is (I'll be using present tense throughout this entire article) multitasking. Some of you no doubt are asking... what is multitasking?

It will not surprise any of you that a computer's CPU is capable of only doing one thing (or instruction) at any one instant... [For the pedants out there, I'll only be considering single processor systems in this article.] However a microprocessor can operate at speeds usually measured in hundreds of thousands (or even millions) of instructions per second, and thus it is possible to make it seem (to the user, or maybe even users) that the CPU is doing more than one thing at a time. This is achieved by time-slicing the CPU.

At a fixed interval, which on the QL is at the TV/monitor vertical sync rate, 50 Hz (in the US it is 60 Hz), the CPU is interrupted. A special piece of code, known as the scheduler, looks at all of the jobs in the machine and determines (using priorities) which one should get the next time slice. [If there is only one job then this job will get the CPU all to itself.] If the scheduler decides that another job should have a turn, then it performs a context switch. This means that the operating system will save the contents of all registers for the current job somewhere in memory, and then reload the registers with the previously saved state of the other job that is about to be run. Each job proceeds as though it has the CPU all to itself, and it is the responsibility of the operating system to perform all of the necessary housekeeping to keep everything running smoothly.

This setup would be fine if each job only required the CPU and did not have any real world contact, ie input/output. What should happen when a job is waiting for input (or even output, eg. microdrives)? Should the CPU go into a loop waiting for the input to appear, or is it possible to let the CPU get on with something constructive. What most proper operating systems (including QDOS) will do is mark the job as 'waiting for I/O'. This means that the scheduler will not consider the job at the next interrupt. The job will be reconsidered for a time-slice only when the I/O is ready (ie for reads: the data is waiting, and for writes: the data has been written). This method of operation ensures that the CPU is always being used for real work...

There are other problems as well... Should a job be able to access memory (ie RAM) apart from the area directly used by itself? In most cases the answer will be no and so we need some way of stopping such illegal accesses. This requires hardware, typically in the CPU. The operating system, before passing execution back to a user program (the one which is about to get the next time-slice), sets up the memory limits for the job. Should the job attempt to access memory outside of these limits then a special interrupt, usually called a Illegal Access Exception (or perhaps a Segmentation Violation), will occur. At this point the operating system will intervene and remove the offending job... It is not possible for the job to change the memory limits because this is something that only the operating system can do. [In fact an attempt to do so would cause another special interrupt - a Privilege Violation!] The QL does NOT contain this special hardware and thus it is possible to do naughty things to other jobs in the QLs memory! It also means that faulty jobs can crash the machine...

What are the benefits of multitasking? It really is quite useful to be able to do more than one thing at once... For example it is possible to edit one file whilst compiling another... Another example is that you can print a file out on the printer while doing something else... [It is true that it is possible to print out a file on a MS-DOS computer (a non multitasking operating system) while doing something else; but this requires trickery in the form of interrupt catching. The solution is nowhere near as elegant as the multitasking solution...]

There is another big feature of multitasking - the ability to create pipes. The idea behind pipelines is that to perform some task you use a number of programs; the data passes through all programs in turn. The alternative is to just have one BIG program which does everything; the problem with big programs is that they are difficult/costly to write and/or maintain... I'll talk more about pipes when I have covered input and output, which I'll probably talk about next month.

Lastly, it must be said that multitasking is viewed by software writers as being important enough to require a new operating system to be released... OS/2 was developed for two reasons... (a) multitasking, and (b) a more standard windowing environment.

David Burns
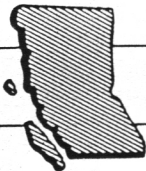
Yes, the Pacific Coast Computer Fair Association lives. Following our membership drive this spring, enough new members joined the PCCFA to allow the association to continue. The first project of the new, improved PCCFA will be the 1990 Pacific Coast Computer Fair. What we need most right now is publicity, so please pass the following information to the members of your group and anybody else who might be interested.

The 1990 Pacific Coast Computer Fair and Swap Meet will be held on Saturday October 20th at the McPherson Centre, one week later than we originally planned. The Fair will feature the usual swap meet and user group tables and a (we hope) a variety of interesting speakers. Since this is the tenth anniversary of our first computer fair, we are also working on a few things to make this year's fair something a little bit special.

As you are probably aware, the Pacific Coast Computer Fair is organized by the Pacific Coast Computer Fair Association, a non-profit group of computer users. We are always looking for volunteers to help in planning our events or at the events themselves. Anyone interested in participating in the association is invited to call me at 421-6535 (home).

Since past experience shows that the computer fair always seems to arrive a month before we expect it, it is never too early to begin planning your user group display. As always, we will be providing tables for non-commercial user group displays at no charge. Your group's representative(s) in the PCCFA will be handling most of the coordination between your group and the association. If you do not have a representative regularly attending PCCFA meetings, we urge you to find one, since user group representation in the association is vital if the PCCFA is to be responsive to your needs. If you simply cannot find someone to attend the meetings (or if you have any questions), please contact me at the number given above.

Finally, you may have heard of an event being billed as the "Computer Fest and Swap Meet", which is scheduled to take place at the end of September at the McPherson Centre. Despite the similarities of date, location, and even name, this event is in no way associated with the Pacific Coast Computer Fair or the PCCFA. It is a commercial venture being run by the same people who held shows at the old Expo site last fall and McPherson Centre last spring. We expect to see a lot of confusion regarding these two events, so we are asking you to help spread the word.

If you have any questions about the Fair or the PCCFA that are not answered by this letter or the enclosed flyer, please call me at 421-6535.

Brian Smith

10

Celebrating Our Tenth Anniversary

The Original

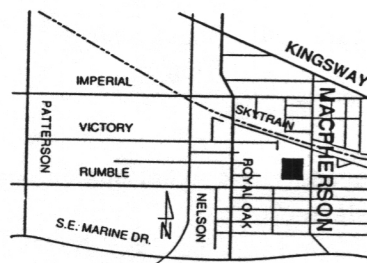# PACIFIC COAST COMPUTER FAIR & SWAP MEET

OCTOBER 20th

SATURDAY, 10 a.m. - 4 p.m. McPherson Centre

7325 MCPHERSON AVENUE, BURNABY, B.C.

FEATURING

- Speakers
- User Groups
- Door Prizes
- New & Used Equipment
- Cake & Refreshments

GENERAL ADMISSION ONLY $2

TABLES

$25 Before October 1
$35 Thereafter

TABLE PRE-REGISTRATION
PHONE: **590-4588**   INFO LINE: **879-9871**

SPONSORED BY THE
PACIFIC COAST COMPUTER FAIR ASSOCIATION

ACCESS

27

The last three instructions in this routine are missing from the "keyboard test" article that I submitted for the March '90 newsletter.

```
print call inkey    ;get key.

      cp stop       ;do you want
      jr z exit      ;to quit?

      cp enter      ;is it a
      jr z nline     ;newline?

      cp rnd        ;is it a
      jr nc print    ;legl char?

      ld hl,rcoun   ;get
      ld b,(hl)      ;print
      ld hl,(lin21)  ;position.

      ld (hl),a      ;print
      inc hl         ;character.

      djnz svpos    ;if row is
                     ;finish,
                     ;then

nline call scrll    ;make a new
      jr stpos       ;line.
```

Can you add the corrections in the next newsletter?

                    Vince

THE QUAINTLY-NAMED **Happydays** is a calendar program which will tell you the day of the week for any given date, as long as it falls after the introduction of the Julian calendar. That will almost certainly include all of our readers' birthdays, so the program is a good opportunity to discover if you are merry and gay, or work hard for a living, according to the old rhyme.

Enter the day and month as figures, and the year in full, e.g. 1985. Happydays was written by Hsieh Min Hon of Singapore and runs on the ZX-81 in 1K.

```
 10 PRINT "DAY?"
 20 INPUT D
 30 PRINT "MONTH?"
 40 INPUT M
 50 PRINT "YEAR?"
 60 INPUT Y
 70 LET K=INT (.6+(1/M))
 80 LET L=Y-K
 90 LET Q=M+12*K
100 LET P=L/100
110 LET A=INT (P/4)
120 LET B=INT (P)
130 LET C=INT ((5*L)/4)
140 LET E=INT (13*(Q+1)/5)
150 LET Z=E+C-B+A+D-1
160 LET Z=(Z-(7*INT (Z/7)))+1
170 PRINT D;"/";M;"/";Y;" IS A
";
180 IF Z=1 THEN PRINT "SUNDAY"
190 IF Z=2 THEN PRINT "MONDAY"
200 IF Z=3 THEN PRINT "TUESDAY"
210 IF Z=4 THEN PRINT "WEDNESDA
Y"
220 IF Z=4 THEN PRINT "THURSDAY
"
230 IF Z=5 THEN PRINT "FRIDAY"
240 IF Z=6 THEN PRINT "SATURDAY
"
250 STOP
```

```
J P S X X Y X U B B
V A H P N T U T U L
E F K T E O X Q K D
Z V S F D C 1 U U Z
S U I E Z 8 C X U N
G Y T L X P H Y I C
U L B Z C B E F I C
S I N C L A I R A U
U I Y G T B T A Q U
X C O A Z X E M I T
```

The Words Are Hidden In EIGHT
Directions.

VERTICAL, HORIZONTAL, DIAGONAL,
BACKWARDS & FORWARDS.

THE HIDDEN WORDS ARE:

```
CLIVE             SINCLAIR
SPECCY            ZX81
TIMEX             VSUG
```

```
  50 POKE 23658,8
  55 REM
      Remove line 50 if you want
      the hidden words to appear
      in small letters.This will
      help in debugging
  71 CLS
  75 BORDER 6: PAPER 6
 100 CLS
 150 PRINT AT 8,0; INK 2;"
     HIDDEN WORD"''
 200 PRINT INK 3;"          PUZZLE
GENERATOR"''
 400 INPUT "HOW MANY ROWS HIGH?
22 MAX.";MR
 402 IF MR>22 THEN GO TO 400
 450 INPUT "HOW MANY COLUMNS WID
E? 16 MAX.";MC
 452 IF MC>16 THEN GO TO 450
 500 LET NC=MR*MC
 550 LET P$="-"
 600 LET K$="*"
 650 LET D$="+"
 700 LET NW=0
 750 DIM M$(MR,MC)
 800 DIM W$(50,16)
 825 DIM R(50,2)
 850 DIM D(8,2)
 900 DIM S(NC)
 950 DIM U(50)
1000 DIM Q(50)
1700 CLS
2300 LET NW=0
2350 LET E=0
2400 LET NW=NW+1
2450 CLS
2452 PRINT "GRID SIZE IS ";MR;"
X ";MC''
2454 PRINT "YOU HAVE HIDDEN ";NW
-1;" WORDS"''
2456 PRINT "GRID IS ";INT (E/NC*
100);"% FULL"''
2498 PRINT "PRESS ENTER TWICE WH
EN FINISHED"''
2500 PRINT INK 2;"ENTER WORD #";
NW;"   (MAX.50)"
2525 IF NW>50 THEN PRINT : PRINT
 : PRINT "MAX. 50 WORDS USED,PRE
SS ENTER."
2540 INPUT E$
2545 IF NW>50 AND E$="" THEN GO
TO 2700
2550 IF NW>50 AND E$<>"" THEN CL
S : PRINT AT 10,0;"YOU MAY NOT U
SE MORE THAN 50    WORDS. RUN TH
E PROGRAM AGAIN.": PAUSE 900: RU
N 50
2551 LET R(NW,1)=NW: LET R(NW,2)
=LEN E$
2552 LET R(NW,1)=NW: LET R(NW,2)
=LEN E$
2553 LET W$(NW)=E$
2554 LET E=E+LEN (E$)
2600 IF W$(NW,1)=" " THEN GO TO
2700
2650 GO TO 2400
2700 LET NW=NW-1
2750 FOR I=1 TO 8: READ D(I,1):
READ D(I,2): NEXT I
2775 REM
          To make puzzle easier,hide
        words in only 4 directions
        Use
        2800 DATA 0,1,1,1,0,-1,1,
          0,1,1,1,1,0,-1,1
2800 DATA 0,1,1,1,1,0,1,-1,0,-1,
-1,-1,-1,0,-1,1
2905 LET EST=INT (((NC/100)*.6)+
(6.7↑(NC*(E/NC)/100+.6)))
2910 PRINT AT 4,0;"   THE TIME IT
 TAKES TO COMPLETE THE PUZZLE WI
LL VARY WITH THE    SIZE OF THE G
RID AND THE NO. OF WORDS USED.";
TAB 2; INK 2;"TIME INCREASES GRE
ATLY FOR        LARGER GRIDS OVER
50% FULL."
2911 PRINT
2912 PRINT
EST.TIME OF THIS PUZZLE ";EST;"
 MIN."
2950 PRINT AT 16,0; FLASH 1;"SET
TING UP THE GRID,PLEASE WAIT"
3000 FOR I=1 TO MR: FOR J=1 TO M
C: LET M$(I,J)=P$: NEXT J: NEXT
I
3050 FOR I=1 TO NC: LET S(I)=0:
NEXT I
3100 RANDOMIZE
3150 FOR I=1 TO NC
3200 LET Q=INT (RND*NC)+1: IF S(
Q)<>0 THEN GO TO 3200
3250 LET S(Q)=I
3300 NEXT I
3350 FOR I=1 TO NW: LET Q(I)=0:
LET U(I)=0: NEXT I
3400 FOR I=1 TO NW-1
3402 LET J=I
3404 LET T1=R(I+1,1): LET T2=R(I
+1,2)
3406 IF T2<R(J,2) THEN GO TO 341
4.
3408 LET R(J+1,2)=R(J,2): LET R(
J+1,1)=R(J,1)
```

29

```
3410 LET J=J-1
3412 IF J>=1 THEN GO TO 3406
3414 LET R(J+1,2)=T2: LET R(J+1,
1)=T1
3416 NEXT I
3560 FOR I=1 TO NW
3562 LET Q(I)=R(I,1)
3564 NEXT I
3600 LET MF=0: LET WA=NW: LET FU
=0: LET DI=1
3650 PRINT AT 18,0; INK 2;
"STARTING TO FILL THE GRID!"'''
3700 FOR N=1 TO NC
3750 LET CP=S(N)
3800 LET CR=INT ((CP-1)/MC)+1: L
ET CC=CP-(CR-1)*MC
3850 IF M$(CR,CC)<>P$ THEN GO TO
7000
3900 IF WA=0 THEN LET MF=0: GO T
O 6950
3950 LET M$(CR,CC)=K$
4000 LET DK=1
4050 LET IR=D(DI,1): LET IC=D(DI
,2)
4100 LET RT=1: IF IR<0 THEN LET
RT=MR
4150 IF IR=0 THEN LET RT=CR
4200 LET CT=1: IF IC<0 THEN LET
CT=MC
4250 IF IC=0 THEN LET CT=CC
4300 LET BR=CR: LET BC=CC
4350 IF (BR=RT AND IR<>0) OR (BC
=CT AND IC<>0) THEN GO TO 4600
4400 REM GO TO 1500
4450 LET BR=BR-IR
4500 LET BC=BC-IC
4550 GO TO 4350
4600 LET RT=1: IF IR>0 THEN LET
RT=MR
4650 IF IR=0 THEN LET RT=CR
4700 LET CT=1: IF IC>0 THEN LET
CT=MC
4750 IF IC=0 THEN LET CT=CC
4800 LET ER=CR: LET EC=CC
4850 IF (ER=RT AND IR<>0) OR (EC
=CT AND IC<>0) THEN GO TO 5050
4900 LET ER=ER+IR
4950 LET EC=EC+IC
5000 GO TO 4850
5050 LET UR=ER: IF BR>ER THEN LE
T UR=BR
5100 LET LR=BR: IF ER<BR THEN LE
T LR=ER
5150 LET UC=EC: IF BC>EC THEN LE
T UC=BC
5200 LET LC=BC: IF EC<BC THEN LE
T LC=EC
5250 LET PR=BR: LET PC=BC: LET X
$=""
5300 LET X$=X$+M$(PR,PC)
5350 LET PR=PR+IR: LET PC=PC+IC:
IF PR>=LR AND PR<=UR AND PC>=LC
AND PC<=UC THEN GO TO 5300
5400 LET PL=LEN (X$)
5452 LET QO=1
5454 LET Q$=X$
5456 LET R$=K$
5458 GO SUB 5462
5460 LET P=QF
5461 GO TO 5500
5462 LET QF=0
5464 IF LEN (R$)=0 THEN RETURN
5466 IF QO+LEN (R$)-1>LEN (Q$) T
HEN RETURN
5468 IF Q$(QO TO QO+LEN (R$)-1)=
R$ THEN GO TO 5474
5470 LET QO=QO+1
5472 GO TO 5466
5474 LET QF=QO
5476 RETURN
5500 FOR L=1 TO P: FOR R=PL TO P
STEP -1
5550 LET C$=X$(L TO L+(R-L+1)-1)
: LET CL=LEN (C$)
5600 LET Q=1
5650 LET W=Q(Q)
5700 FOR K=1 TO 15
5701 IF W$(W,K)<>" " THEN NEXT K
5702 IF K-1<>CL THEN LET MF=0: G
O TO 6750
5750 LET MF=1
5800 FOR C=1 TO CL
5850 IF C$(C)=P$ OR C$(C)=K$ THE
N GO TO 5950
5900 IF C$(C)<>W$(W,C) THEN LET
C=CL: LET MF=0
5950 NEXT C
6000 IF MF=0 THEN GO TO 6750
6050 LET F$=W$(W,1 TO C-1)
6100 IF L>1 THEN LET F$=D$+F$: L
ET L=L-1: GO TO 6100
6150 IF R<PL THEN LET F$=F$+D$:
LET R=R+1: GO TO 6150
6200 LET PR=1: LET R=BR: LET C=B
C
6250 LET Y$=F$(PR TO PR+1-1): IF
Y$=D$ THEN GO TO 6350
6300 LET M$(R,C)=Y$
6350 IF (R=ER AND IR<>0) OR (C=E
C AND IC<>0) THEN GO TO 6450
6400 LET C=C+IC: LET R=R+IR: LET
PR=PR+1: GO TO 6250
6450 IF Q=WA THEN GO TO 6550
6500 FOR I=Q TO WA-1: LET Q(I)=Q
(I+1): NEXT I
6550 LET WA=WA-1
6600 LET U(W)=1
6650 LET R=P: LET L=P: LET DK=8
6700 POKE 23692,255: PRINT "USED
WORD ";NW-WA;"/";NW;" ";W$(W):
GO TO 6800
6750 LET Q=Q+1: IF Q<=WA THEN GO
TO 5650
6800 NEXT R: NEXT L
6850 LET DI=DI+1: LET DK=DK+1: I
F DI>8 THEN LET DI=1
6900 IF DK<=8 THEN GO TO 4050
6950 IF MF=0 THEN LET M$(CR,CC)=
CHR$ (INT (RND*26)+65): LET FU=F
U+1: POKE 23692,255: PRINT "USED
A FILL CHAR. ";NC-N: GO TO 7050
7000 PRINT "CELLS NOT YET EXAM.
";NC-N
7050 NEXT N
7098 BEEP 2,30
7100 CLS
7150 PRINT AT 3,8; FLASH 1; INK
2;"PUZZLE COMPLETED"'''
7300 PRINT TAB 3;"PRINTER AND DI
SPLAY SECTION"'''
7500 PRINT                      "
     WHERE DO YOU WISH THE  PUZZLE
SENT?"'''
7700 PRINT TAB 4;"(1) SCREEN DIS
PLAY ONLY"''
7800 PRINT TAB 4;"(2) SEND TO PR
INTER ONLY"''
```

```
7900 PRINT TAB 4;"(3) SCREEN AND
PRINTER"'''
8050 PRINT "(ENTER 1,2 or 3)"
8150 INPUT A$
8200 IF A$="1" THEN PRINT AT 14,
8;; OVER 1;"_____
: PAUSE 120: GO TO 8400
8210 IF A$="2" THEN PRINT AT 16,
8; INK 2; OVER 1;"_____
_____": PAUSE 120: GO TO 8850
8220 IF A$="3" THEN PRINT AT 18,
8; INK 2; OVER 1;"_____
_____": PAUSE 120: GO TO 8400
8350 GO TO 8050
8400 CLS
8450 FOR T=1 TO MR
8550 PRINT M$(T,1 TO MC)
8750 NEXT T
8754 PRINT
8755 IF A$="1" THEN GO TO 9950
8850 FOR T=1 TO MR
8851 LET V$=""
8852 FOR C=1 TO MC
8854 LET V$=V$+M$(T,C)
8855 LET V$=V$+" "
8856 NEXT C
8858 LPRINT
8860 LPRINT V$
8862 NEXT T
8864 IF A$="2" THEN GO TO 9951
9950 PRINT
The Words Are Hidden In EIGHT
Directions."
9951 IF A$<>"1" THEN LPRINT : LP
RINT
The Words Are Hidden In EIGHT
Directions."
9952 IF A$<>"2" THEN PRINT        "
VERTICAL, HORIZONTAL, DIAGONAL,
BACKWARDS & FORWARDS."
9953 IF A$<>"1" THEN LPRINT : LP
RINT                              "
VERTICAL, HORIZONTAL, DIAGONAL,
BACKWARDS & FORWARDS."
9960 IF A$<>"2" THEN PRINT : PRI
NT "THE HIDDEN WORDS ARE:": POKE
 23692,255
9961 IF A$<>"1" THEN LPRINT : LP
RINT "THE HIDDEN WORDS ARE:"
9962 IF A$<>"2" THEN PRINT : POK
E 23692,255
9963 IF A$<>"1" THEN LPRINT
9964 FOR I=1 TO NW
9966 IF U(I)<>0 THEN GO TO 9974
9967 GO TO 9970
9970 NEXT I
9972 GO TO 9980
9974 IF A$<>"2" THEN PRINT W$(I)
;;
9975 IF A$<>"1" THEN LPRINT W$(I
);
9976 GO TO 9970
9980 PRINT
9981 IF A$<>"1" THEN LPRINT
9982 PRINT : PRINT "RETURNE TO M
ENU? (Y or N)"
9984 INPUT A$
9986 IF A$="Y" THEN GO TO 7100
9988 IF A$<>"N" THEN GO TO 9982
9997 STOP
9998 CLEAR : SAVE "HideAword" LI
NE 50
```
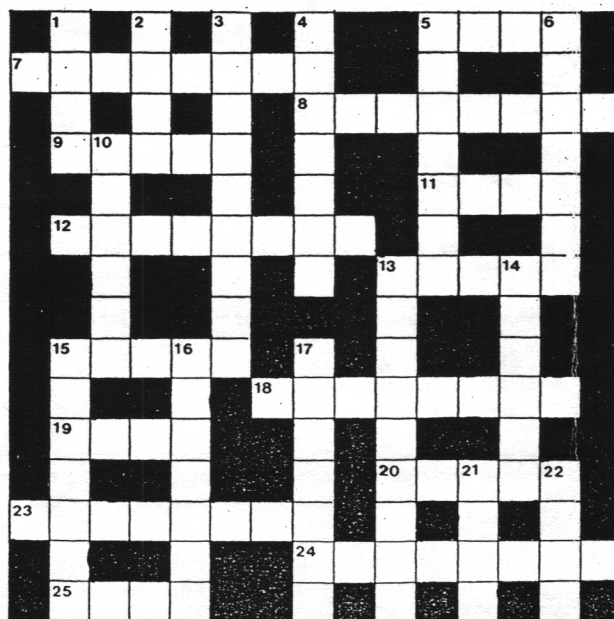
ZXWORD by Henry Howarth

Across
5. Exchange for wasp (4)
7. Modem perhaps unwelcome when called in (8)
8. Aixelsyd (8)
9. Following string in the rafters (5)
11. Musical ending of a programmer, by the sound of it (4)
12. Not a logic gate (8)
13. Points to attempt for access (5)
15. Somehow cater for debugging (5)
18. Albino MI expansion? (8)
19. Space for nothing in ROM (4)
20. Stored LED, if corrupted (5)
23. Heaven for Nordic gods (8)
24. Royal Exchange with up-market boat to put on the market again (8)
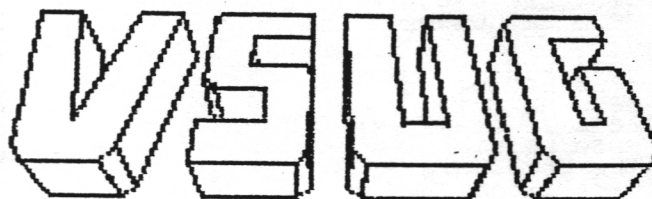25. Some absurdly irrational number (4)

Down
1. A million ruined the game (4)
2. For it must follow in Basic (4)
3. Replace stored information above pen (9)
4. Commanded a pair like (x,y) (7)
5. SI unit of Information Technology? (7)
6. Type of number encountered at junior school (7)
10. Input digit for key-strokes? (6)
13. EOF as office wastebin, perhaps (3,2,4)
14. Spin to tear (6)
15. Strings as substring of both read statements? (7)
16. Imperative statement (7)
17. Where to browse to get your routines? (7)
21. Large in amplitude (4)
22. Cut into little bits what are unfair when loaded (4)

solution on page 110

VSUG

The Vancouver Sinclair Users Group has been in existence since 1982. We are a support group for the owners and users of all SINCLAIR and TIMEX computers.

Prez:- Gerd Breunung PH#(604) 931-5509
V/Prez & N/L Publisher:- Rusty Townsend
Scribe:- Harvey Taylor
Treaz. & N/L Editor:- Rod Humphreys

Our membership dues are only $15.00/year and may be sent to the Treasurer:

Rod Humphreys
2006 Highview Place
Port Moody, B.C., V3H 1N5

Members of VSUG receive a monthly issue of ZXAppeal - our newsletter.

ZXAppeal accepts advertising. Our **PREPAID** rates are:

$10.00 — full page
$8.00 — 1/2 page
$5.00 — 1/4 page

ZXAppeal is distributed to approx 30 other T/Sinclair User Groups throughout North America as well as overseas via the NETWORK. NETWORK correspondence may be directed to the Editor at the above address.

Copyright of all articles appearing in ZXAppeal is retained by the author with the understanding that other T/S User Groups may reprint any article appearing in ZXAppeal provided credit is given to the author and VSUG.

ZXWORD SOLUTION

Across
5. Swap
7. Receiver
8. Dyslexia
9. After
11. Coda
12. Inverter
13. Entry
15. Trace
18. Binomial
19. Room
20. Filed
23. Valhalla
24. Relaunch
25. Surd

Down
1. Mega
2. NEXT
3. Overwrite
4. Ordered
5. Silicon
6. Primary
10. Finger
13. End of file
14. Rotate
15. Threads
16. Command
17. Library
21. Loud
22. Dice